

OBSERVATIONS AND UNDERSTANDING OF SCALE-DEPENDENT OCEAN WAVE TURBULENCE

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Recent laboratory and field measurements reveal certain features of ocean wave spectra (on scales from capillary ripples to planetary waves) that cannot be explained by standard scale-invariant theories of weak wave turbulence. These include breaks in power laws and dependence on an intrinsic scale, such as the Rossby radius of deformation. Among other data, we present spectra, based on satellite altimeter measurements, of sea surface height variations on scales 20 to 1000 km. Our interpretation of the observed spectra employs a **recently** developed "**multiwave-interaction**" theory of wave turbulence in **scale**-dependent systems. This heuristic approach yields fairly accurate analytical description of capillary-gravity, inertia-gravity, Rossby and other nonlinear-wave spectra,

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2. NP5. 1/OA 12 Nonlinear Waves, Instability and Wave Flow Interaction

3. **V. I. Shrira** and **L.A. Ostrovsky**

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5. Oral

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